

## Remarks

Claims 14-18 and 20-23 and 25-28 are currently pending.

Claims 1-13 have been canceled without prejudice or disclaimer in an effort to obtain allowable claims. The Applicants reserve the right to pursue these claims in a continuation application.

Claim 19 has been canceled because several of the amino acid limitations present in Claim 19 are now present in amended Claims 14 and 15.

Claims 14 and 15 have been amended to incorporate several limitations already in claim 19. Support for this amendment can be found in the Specification, Section 5.2 (pages 14-18) and original claim 19 and no new matter is involved.

Claims 20-22 have been amended to depend on Claim 14 because Claim 19 has been canceled. Additionally, Claims 20-22 have been amended to delete three (3) amino acid positions from the claim. Support for these amendments can be found in the Specification at Section 5.2 (pages 14-18) where it states that one or more of the various amino acid positions may contain a mutation. This amendment did not involve new matter.

Claims 25-27 have been added and depend upon Claim 15. Claim 28 is an independent claim that claims a method to produce a mutant having 2 amino acid changes in the EPSPS protein. This double amino acid mutant is described in the Specification (Section 6) and Drawings (Fig 2, 6 and 7)

### Reference B1

The Applicants' previous comments relating to reference B1 were directed to the US equivalent of the German language EP 679657, namely, US patent 5,750673.

## Drawings

### 101 Rejection

Claims 1-13 have been rejected under 35 USC 101 for being directed to non-statutory subject matter. The Examiner specifically states that one of skill in the art would not be able to recognize the "hand of man" in a plant produced by the present process and therefore could not distinguish a claimed product from a naturally occurring mutant plant containing a herbicide resistant EPSPS enzyme. The rejection is deemed moot in view of the above amendments canceling (without prejudice) claims 1-13.

### 102(a) Rejection by Hawkes et al

Claims 1-23 have been rejected under 35 USC 102(a) as being anticipated by Hawkes et al WO 98/54330 published 3 December 1998. This rejection is respectfully traversed.

The present rejection under 102(a) is deemed moot in view of the above amendments to the claims which are now limited to methods of making specific mutant EPSPS genes in plants. In particular, the EPSPS genes are mutated to result in the expression of an EPSPS gene product (protein) that has a mutation at one or more of the following amino acid positions:

Leu<sub>173</sub> ;

Ala<sub>179</sub> ,

Met<sub>180</sub> ,

Arg<sub>181</sub> ,

Ser<sub>98</sub> ,

Ser<sub>255</sub> and

Leu<sub>198</sub>

in *Arabidopsis* or at an analogous amino acid residue in an EPSPS paralog. Hawkes et al cannot support a 102(a) rejection of the presently amended claims because Hawkes et al do not change the amino acids in the presently claimed positions. Additionally, Hawkes et al is totally silent as to the effects that the presently claimed amino acid position

claimed mutant EPSPS gene products. This argument equally applies to added Claims

25-27 because they just depend on Claim 15. New Claim 28 covers a double mutation which was not disclosed by Hawkes et al. Therefore, Hawkes et al cannot support an obviousness rejection either.

In view of the above, Claims 14-18 and 20-23 and 25-28 are neither anticipated by Hawkes et al nor rendered obvious. Withdrawal of the 102(a) rejection to Claims 14-18 and 20-23 is respectfully requested.

102/103 Rejection by Lebrun et al (WO 97/04103)

Claims 1-13 were rejected under 35 USC 102(b) and 103(a) over Lebrun et al WO 97/04103. This rejection is deemed moot in view of the above amendments canceling claims 1-13.

Rejections Employing Commonly Assigned USSN 09/424,344

Commonly assigned US application Serial Number 09/424,344 has been employed to reject Claims 1-23 under 35 USC 102(e), 102(f), and 102(g) and has been employed as the basis of a provisional double patenting rejection and a demand to elect the first inventor. These rejections and demand to name a prior inventor are deemed moot in view of the fact that USSN 09/424,344 is now abandoned. The Applicants will submit the notice of abandonment when received by the Patent Office.

In view of the above it is respectfully requested that all of the pending rejections be withdrawn and that Claims 14-18 and 20-23 and newly added Claims 25-28 be allowed to issue.

Respectfully submitted,

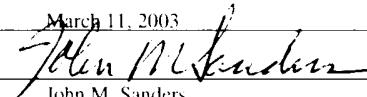


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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

**Please cancel Claim 1-13 and 19 without prejudice.**

**The claims are amended as follows:**

**WE CLAIM:**

14. (As Twice Amended) A method for producing a non-transgenic herbicide resistant or tolerant plant comprising

a. introducing into a plant cell a recombinagenic oligonucleobase to produce a mutant EPSPS gene that expresses an EPSPS protein that is mutated at one or more amino acid positions, said positions selected from the group consisting of Leu<sub>173</sub>; Ala<sub>179</sub>, Met<sub>180</sub>, Arg<sub>181</sub>, Ser<sub>98</sub>, Ser<sub>255</sub> and Leu<sub>198</sub> in Arabidopsis or at an analogous amino acid residue in an EPSPS paralog;

b. identifying a cell having a mutated EPSPS gene, which cell has substantially normal growth as compared to a corresponding wild-type plant cell; and

c. regenerating a non-transgenic herbicide resistant or tolerant plant from said plant cell.

15. (As Twice Amended) A method for producing a non-transgenic herbicide resistant or tolerant plant comprising

a. introducing into a plant cell a recombinagenic oligonucleobase to produce a mutant EPSPS gene that expresses an EPSPS protein that is mutated at one or more amino acid positions, said positions selected from the group consisting of Leu<sub>173</sub>; Ala<sub>179</sub>, Met<sub>180</sub>, Arg<sub>181</sub>, Ser<sub>98</sub>, Ser<sub>255</sub> and Leu<sub>198</sub> in Arabidopsis or at an analogous amino acid residue in an EPSPS paralog; [and]

b. identifying a cell having a mutated EPSPS gene, which encoded

c. regenerating a non-transgenic herbicide resistant or tolerant plant from said plant cell.

20. (As TwiceAmended) The method according to claim [19] 14 in which the positions in the *Zea mays* paralog are selected from the group consisting of Leu<sub>97</sub>, [Gly<sub>101</sub>, Thr<sub>102</sub>,] Ala<sub>103</sub>, Met<sub>104</sub>, Arg<sub>105</sub>, [Pro<sub>182</sub> ,]Ser<sub>23</sub>, Ser<sub>179</sub>, and Leu<sub>122</sub>.

21. (As Twice Amended) The method according to claim [19] 14 in which the positions in the *Brassica napus* paralog are selected from the group consisting of Leu<sub>169</sub>, [Gly<sub>173</sub>, Thr<sub>174</sub> ] Ala<sub>175</sub>, Met<sub>176</sub>, Arg<sub>177</sub>, [Pro<sub>178</sub>, ]Ser<sub>94</sub>, Ser<sub>251</sub> and Leu<sub>194</sub>.

22. (As Twice Amended) The method according to claim [19] 14 in which the positions in the *Petunia hybrida* are selected from the group consisting of Leu<sub>169</sub>, [Gly<sub>173</sub>, Thr<sub>174</sub>, ]Ala<sub>175</sub>, Met<sub>176</sub>, Arg<sub>177</sub>, [Pro<sub>178</sub>, ]Ser<sub>94</sub>, Ser<sub>251</sub> and Leu<sub>194</sub>.